

RECEIVED
CENTRAL FAX CENTER

MAR 05 2008

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listing, of claims in the application.

Listing of the Claims:

1. (previously presented) A field emitter composition comprising:

a quantity of silica powder;

a quantity of carbon black wherein the carbon black is from diesel fuel exhaust; and

a quantity of a mixing medium;

wherein the quantity of silica and the quantity of carbon black are dispersed in said mixing medium that includes an ingredient selected from the group consisting of a photoresist, a polymer that is converted into diamond by heat, and a polymer selected from the group consisting of epoxies, polyurethanes, polyacrylates, polyesters, and polyimides, and wherein said mixing medium has a viscosity of less than approximately 1500 cps.

2.-3. (Canceled)

4. (previously presented) The composition of claim 1 wherein said field emitter composition is defined in a desired pattern.

5. (Canceled)

6. (previously presented) The composition of claim 1 wherein said mixing medium has a viscosity of less than approximately 250 cps.

7. (previously presented) The composition of claim 1 further comprising an organic solvent, said organic solvent providing a desired viscosity to said field emitter composition.

8. (previously presented) The composition of claim 1 wherein said field emitter has an extraction field from about 1 V/ μ m to about 20 V/ μ m.

9.-11. (canceled)

12. (previously presented) The composition of claim 4 wherein said field emitter forms part of an integrated circuit.

13. (previously presented) The composition of claim 1 wherein said field emitter composition is disposed on a substrate surface.

14. (previously presented) The composition of claim 13 wherein said substrate surface is planarized utilizing a chemical mechanical polishing step.

15. (previously presented) The composition of claim 13 wherein said substrate surface is a non-planar surface.

16. (previously presented) The composition of claim 1 wherein said mixing medium comprises a polymer that is converted into diamond by heat.

17. (canceled)

18. (currently amended) A method of processing a field emitter formulation comprising the steps of: providing a first quantity of carbon black;

providing a second quantity of a mixing medium that includes an ingredient selected from the group consisting of a photoresist, a polymer that is converted into diamond by heat, and a polymer selected from the group consisting of epoxies, polyurethanes, polyacrylates, polyesters, and polyimides;

providing a third quantity of silica powder;

mixing said first quantity of carbon black and said third quantity of silica powder with said second quantity of mixing medium to derive said field emitter formulation; applying said field emitter formulation onto a substrate, curing said field emitter formulation, ~~and~~

measuring said field emitter formulation for a desired vertical resistance, and adding additional carbon black if the formulation does not have the desired vertical resistance.

19.-20. (canceled)

21. (previously presented) The method of claim 18 wherein said mixing medium comprises a photoresist.

22. (canceled)

23. (canceled)

24. (canceled)

25. (previously presented) The method of claim 18 wherein said substrate comprises a conductive material.

26. (previously presented) The method of claim 18 wherein said substrate has a planar surface.

27. (previously presented) The method of claim 18 wherein said substrate has a non-planar surface.

28. (previously presented) The method of claim 18 wherein said substrate comprises a flexible substrate.

29. (Withdrawn) An X-ray source comprising:

a substrate;

a field emitter composition provided along a surface of said substrate, said field emitter composition comprising carbon black,

a conductive layer provided along an upper support structure; such that when said conductive layer is struck by impinging high-energy electrons emitted from said field emitter composition, said upper support structure converts said impinging high-energy electrons into x-rays.

30. (Withdrawn) The invention of claim 29 wherein a grid is provided between said upper support structure and said conductive layer.

31. (Withdrawn) The invention of claim 29 wherein said carbon black is dispersed in a mixing medium.

32. (Withdrawn) The invention of claim 29 wherein said conductive layer comprises Mo, Cu, W, or other like material.

33. (Withdrawn) The invention of claim 29 wherein said upper support structure comprises a low atomic mass material.

34. (Withdrawn) The invention of claim 29 wherein said emitter composition further comprises silica.

35. (Withdrawn) A high energy electron source comprising:

a substrate;

a field emitter composition provided along a surface of said substrate, said field emitter composition comprising carbon black;

an upper support structure comprising a plurality of apertures; wherein said structure also comprises an electron transparent film and also comprises a metallic grid; wherein energizing said metallic grid attracts electrons emitted from said field emitter composition.

36. (canceled)

THIS PAGE BLANK (USPTO)